REMARKS/ARGUMENTS

Favorable reconsideration of this application, in view of the above amendments and in light of the following discussion, is respectfully requested.

Claims 1-2 and 4-19 are pending. Claims 1-2 and 4-17 are presently amended. Claims 18-19 are new. Claim 3 is canceled without prejudice or disclaimer. No new matter is introduced.[1]

In the Office Action, Claims 1-3, 7-8, 10, 12-13, and 15-17 were rejected under 35 U.S.C. § 102(b) as anticipated by Itanani (U.S. Patent No. 5,188,862). Claims 1-2 and 5 were rejected under 35 U.S.C. § 102(b) as anticipated by Tahim (U.S. Patent No. 5,265,268). Claims 4, 9, and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Itanani in view of Ohmi (U.S. Patent No. 6,690,702). Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Itanani in view of Inouchi (U.S. Patent No. 6,184,624). Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Itanani in view of Choe (U.S. 2004/40250954).

Amended independent Claim 1 recites a distributor including an oscillator, a first square waveguide connected to the oscillator, and a second square waveguide having a plurality of openings. Amended Claim 1 recites a plurality of radiation waveguides arrayed in a widthwise direction perpendicular to tube axes. Amended Claim 1 further recites the first square waveguide and the second square waveguide *communicate with each other through a communication hole formed in a first narrow wall of each of the first and second square waveguides*. The first square waveguide also includes a *first guide wall which projects from a second narrow wall toward the communication hole* and guides the electromagnetic waves towards the communication hole. Furthermore, amended Claim 1 recites that *electromagnetic waves reflected by the first guide was that travel in an opposite*

[1] Amended Claims 1-2, 4-17 and new Claims 18-19 find support in the claims as previously presented and at least at p. 13, lns. 17-21 of the specification as originally filed, for example.

direction in said first square waveguide cancel electromagnetic waves which are reflected by an end of said first square waveguide.

Turning to the applied references, Figure 7A and 7B of Itanani illustrates a microwave plasma generating apparatus which has two waveguides 1 and 1 in a generally rectangular cross-section *disposed around or outside the outer periphery of a cylindrical quartz tube 13* at a right angle to each other.[2] Figure 7A and 7B of Itanani further illustrates another pair of waveguides 16 and 16 arranged outside the cylindrical quartz tube 13 at a right angle to each other; such that each of the waveguides 16 opposes one of the waveguides 1.[3] The waveguides 16 include reflectors 12 which cause microwaves emitted from the respective pair of opposing waveguides 1 to intersect at a susceptor 15 disposed within the cylindrical quartz tube 13.[4] Itanani states that this configuration generates a standing wave which creates a plasma in a constant position within the cylindrical quartz chamber.[5]

However, Itanani does not suggest or disclose (1) a first and second square waveguide that communicate through a communication hole formed in a first narrow wall of each respective square waveguide and (2) a first square waveguide including a first guide wall that projects from a second narrow wall of the first square waveguide towards the communication hole, such that (3) waves reflected by the first guide wall that travel in an opposite direction cancels the electromagnetic waves reflected by an end of the first square waveguide.

With regard to (1) above, Itanani illustrates 2 opposing pairs of waveguides disposed outside a central cylindrical quartz tube. Opposing *pairs of waveguides connected by a central cylindrical tube* are not tantamount to a first and second square waveguide that communicate through a communication hole in a respective first narrow wall. Accordingly, Itanani does not suggest or disclose all of the features of amended independent Claim 1.

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[2] See, Itanani at col. 5, lns 12-18.
[3] See, Itanani at col. 5, lns 18-25.
[4] Id.
[5] See, Itanani at col. 12, lns 31-40.

With regard to (2) above, Figure 6 of Itanani illustrates a reflector 12 placed within the waveguide 16 but not attached to any particular wall. By comparison amended Claim 1 recites a first guide wall which *projects from a second narrow wall towards a communication hole.* A reflector merely placed within a waveguide is not equivalent to a first guide wall the projects from a second narrow wall towards a communication hole. Accordingly, Itanani does not suggest or disclose all of the features of amended independent Claim 1.

With regard to (3) above, Itanani states that the reflector 12 is used to *create a standing wave* over a substrate. By comparison the first guide wall of amended Claim 1 is positioned such that *reflected waves from the guide wall cancel reflected waves from an end of the first square waveguide.* Creating a standing wave is not equivalent to canceling reflected waves. Accordingly, Itanani does not suggest or disclose all of the features of amended independent Claim 1.

Tahim fails to cure the deficiencies of Itanani. Figure 1 of Tahim illustrates a mixer 10 including a first waveguide 12, a second waveguide 14 abutting a side of the first waveguide 12, and a third waveguide 18 abutting a side of the first waveguide 12 at a second input port 20 of the first waveguide.[6] Tahim also illustrates an input probe 22 in the first input port 16 for coupling microwave power from the second waveguide 14 to the first waveguide 12.[7] The probe 22, diodes 27, and components of a filter 24 are supported by a plate 32 of dielectric electrically-insulated material disposed parallel to a broad wall of the first waveguide 12.[8] Furthermore, Tahim illustrates a mixing section 30 where two microwave signals of different frequencies, inputted by the second waveguide 14 and the third waveguide 18, interact with diodes 28 to produce signals at other frequencies.[9]

[6] See, Tahim at col. 3, lns. 14-20.
[7] See, Tahim at col. 3, lns. 24-26.
[8] See, Tahim at col. 3, lns. 30-34.
[9] See, Tahim at col. 3, lns. 42-46.

However, Tahim does not suggest or disclose (1) a first and second square waveguide that communicate through a communication hole formed in a first narrow wall of each respective square waveguide and (2) a first square waveguide including a first guide wall that projects from a second narrow wall of the first square waveguide towards the communication hole, such that (3) waves reflected by the first guide wall that travel in an opposite direction cancels the electromagnetic waves reflected by an end of the first square waveguide.

With regard to (1) above, Tahim illustrates a second and third waveguide arranged around a mixing section. As described above, waveguides *arranged around a central chamber* are not tantamount to a *first and second square waveguide that communicate through a communication hole* in a respective first narrow wall. Accordingly, Tahim does not suggest or disclose all of the features of amended independent Claim 1.

With regard to (2) above, the Office Action points to figure 2 of Tahim to illustrate a first guide wall that projects towards a communication hole. Figure 2 of Tahim illustrates two wave guides, one rectangular and one T-shaped, but neither waveguide includes a guide wall projecting towards a communication hole. Accordingly, Tahim does not suggest or disclose all of the features of amended independent Claim 1.

With regard to (3) above, Tahim does not suggest or disclose a first guide wall that projects towards a communication hole. Furthermore, Tahim illustrates a mixing section that mixes microwaves of differing frequencies to *produce signals at other frequencies*. By comparison amended Claim 1 recites a first guide wall that *reflects waves that cancel waves reflected of an end of the first square waveguide*. Producing other signals is not equivalent to canceling waves. Accordingly, Tahim does not suggest or disclose all of the features of amended independent Claim 1.

Ohmi fails to cure the deficiencies of Itanani and Tahim. Ohmi illustrates several embodiments for a excimer laser oscillation apparatus. Figure 13A of Ohmi illustrates a

microwave induction means including a waveguide 1 and a plurality of slots S.[10] Ohmi continues stating, that the slog waveguide 1 is connected to the outer surface of a laser tube 2 to extend in a direction parallel to its axial direction.[11] Ohmi further illustrates that electromagnetic waves emitted from the slots S are introduced into the laser tube 2 and ionize a laser gas to produce a plasma.[12] However a singular T-shaped waveguide does not suggest or disclose (1) a first and second square waveguide that communicate through a communication hole formed in a first narrow wall of each respective square waveguide and (2) a first square waveguide including a first guide wall that projects from a second narrow wall of the first square waveguide towards the communication hole, such that (3) waves reflected by the first guide wall that travel in an opposite direction cancels the electromagnetic waves reflected by an end of the first square waveguide. Accordingly, Ohmi does not suggest or disclose all of the features of amended Claim 1

Inouchi fails to cure the deficiencies of Itanani, Tahim, and Ohmi. Figure 1 of Inouchi illustrates a single alumina waveguide 2 disposed between a magnetron (not shown) and a plasma chamber 3.[13] A single rectangular waveguide does not suggest or disclose (1) a first and second square waveguide that communicate through a communication hole formed in a first narrow wall of each respective square waveguide and (2) a first square waveguide including a first guide wall that projects from a second narrow wall of the first square waveguide towards the communication hole, such that (3) waves reflected by the first guide wall that travel in an opposite direction cancels the electromagnetic waves reflected by an end of the first square waveguide. Accordingly, Inouchi does not suggest or disclose all of the features of amended Claim 1.

[10] See, Ohmi at col. 12, lns. 61-65.
[11] See, Ohmi at col. 12, lns. 65-68.
[12] See, Ohmi at col. 13, lns. 9-11.
[13] See, Inouchi at col. 5, lns. 37-43.

Choe fails to cure the deficiencies of Itanani, Tahim, Ohmi, and Inouchi. Figure 2 of Choe illustrates a plasma chamber 10 that includes a lower electrode 12 and an upper electrode 13.[14] Choe illustrates that plasma is generated via inductance by varying the frequency and amplitude of a bias power.[15] However, Choe is silent with respect to creating a plasma via microwaves. Accordingly, Choe does not suggest or disclose (1) a first and second square waveguide that communicate through a communication hole formed in a first narrow wall of each respective square waveguide and (2) a first square waveguide including a first guide wall that projects from a second narrow wall of the first square waveguide towards the communication hole, such that (3) waves reflected by the first guide wall that travel in an opposite direction cancels the electromagnetic waves reflected by an end of the first square waveguide.

Based on the foregoing, even the combined teachings of Itanani, Tahim, Ohmi, Inouchi, and Choe do not suggest or disclose all of the features of amended independent Claim 1. Accordingly, amended Claim 1 is believed to be in condition for allowance. Dependent Claims 2, 4-6, and 18-19 are believed to be allowable for at least the same reasons as amended Claim 1, from which they depend, and moreover dependent Claims 2, 4-6 recite additional features not suggested or disclosed by the cited references.

New Claims 18-19, dependent from amended independent Claim 1, are believed to be allowable for at least the same reasons and amended Claim 1. Moreover, new Claims 18-19 recite additional features not suggested or disclosed by the cited references. For example, new Claim 18 recites a first square waveguide that is disposed parallel to a second square waveguide. This feature is not suggested or disclosed by the cited references.

Amended independent Claim 7 recites a plasma processing apparatus that includes the features (1), (2), and (3) recited above. Accordingly, amended independent Claim 7 is

[14] See, Choe at par. 0029.
[15] See, Choe at par. 0041-0042.

believed to be allowable for at least the same reasons as amended Claim 1, for example. Dependent Claims 8-11 and 15-17 are believed to be allowable for at least the same reasons as amended Claim 7, from which they depend, and moreover dependent Claims 8-11 and 15-17 recite additional features not suggested or disclosed by the cited references.

Though drawn to a different statutory classification, amended independent Claims 12, 13, and 14 recite methods that include features (1), (2), and (3) recited above. Accordingly, amended independent Claims 12, 13, and 14 are believed to be allowable for at least the same reasons as amended Claim 1, for example.

For the reasons discussed above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a notice of allowance for Claims 1-2, and 4-19 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better condition for allowance, the Examiner is encouraged to contact the Applicants' undersigned representative at the below-listed telephone number.

Respectfully submitted,

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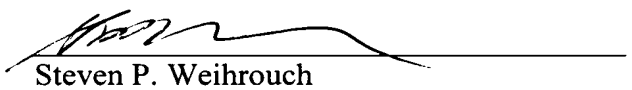

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